

Enhancing Critical Analysis in Research Through Reflective Writing

by

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Abstract: Critical reflection is seen as an integral part of research, particularly action research. This may take the form of group discussion among collaborative researchers who also act as critical friends. However, group processes are complex and critical thinking of the kind expected in PhD theses, is not guaranteed. Another way is through personal journal writing, but because of its personal nature, the methodology of critical reflective writing remains a mystery to many potential users. This paper represents a case study of the many forms of personal writing used by the author to develop and change her thinking over the course of her PhD.

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URL: http://www.fed.qut.edu.au/staff/mste/mhanraha/pub_html/paper1.htm

Introduction

The following sections are in many cases straight from my thesis chapter and probably still need editing. However, with the sun rising and my case still needing to be packed, I'll have to go with it as it is or miss my transport. (As someone said about a letter, 'Please excuse the length of this letter because I don't have time to write a shorter one.') Please see the web-site given on the cover page for the up-dated version I will write when I return from the conference.]

The Fifth Moment of Research

"A messy moment, multiple voices, experimental texts, breaks, ruptures, crises of legitimation and representation, self-critique, new moral discourses, and technologies." (Lincoln & Denzin 1994, p. 581)

The Six Fundamental Issues:

- a critique of positivism & postpositivism; self-critique/appraisal;
- a crisis of representation of the Other
- a crisis of legitimation in the authority
- varying agendas (gender, race, class, etc. perspectives)
- blurring the borders between science and religion
- the influence of technology

Ecological Theories of Human Knowledge

- Maturana and Varela's (1992) "the biology of human understanding"
- Lemke's (1995) "ecosocial systems"
- Polanyi's (1966) "tacit knowing"
- Insight research
- Bob Dick (1998) organisational psychology
- Carr & Kemmis (1986) critical educational theory

Implications

These factors, both those which can be seen as belonging to the Fifth Moment, and the belief in the importance of the personal, together created an environment in which it was no longer possible for me to simply follow or adapt a single methodology and be confident that it would generally guarantee the validity and authenticity of my findings. In my case it led firstly to my adopting then questioning the value for my purposes of each of a series of methodological approaches, as I have recounted in the previous chapter. Similarly, it meant I could not adopt a particular form and style of

dissertation without subjecting it to criticism, with regard to its epistemological assumptions.

Finally, it led to the discovery that I had a meta-methodology which underlay this questioning process, a methodology which had its own set of methods of inquiry and analysis, and its own logic and literature base (which I have explained in detail in my Advanced Paper at this conference, see AARE web pages for document or my own web page on http://www.fed.qut.edu.au/staf/mste/mhanraha/pub_html/advpapmh.htm). The following section is an explication and an analysis of my methodology as I have practised it over the term of my PhD research.

Six issues of the Fifth Moment
+ *one fundamental issue:*

- Perspective as particular

My Methodology: Reflexive Ecosocial System Appraisal

Reflexive Ecosocial System Appraisal is critically-oriented reflection which takes into account the nature of human learning as an integral part of broader sociocultural and material systems a critical social practice a process of adaptation to its cultural and physical milieu often subconscious

Activities

I would define my methodology, which I will call Reflexive Ecosocial System Appraisal, as critically-oriented reflection which takes into account the nature of human learning as an integral part of broader sociocultural and material systems. My use of these terms is meant to suggest that my research is a critical social practice at the same time as suggesting that it is a process of (often subconscious) adaptation to its cultural and physical milieu.

Even though it probably has its seeds in my earlier reading, including Toulmin's (1992) notion of a "conceptual ecology" especially as explained by Posner et al. (1982), my terminology here has been influenced both by action research theory and, more recently, by ecological theories of human knowledge. The latter, as outlined in the previous chapter and developed further in Paper 9 include Maturana and Varela's theory of the "biology of human understanding" (Maturana and Varela, 1992) and Lemke's theory of ecosocial systems (Lemke, 1995). As Paper 9 makes clear, other writers such as Polanyi (1966) and personal correspondents such as Bob Dick (see also Dick, 1998) have also been a considerable influence in this regard. This gives some indication of the flavour of my meta-methodology and some of its main parameters. A more detailed account is necessary, however, to understand its nature,

its scope, what I used it for, and what it was good for, and how the type of activities I practised changed over time.

Characteristics

- nature
-
- scope
-
- content
-
- purpose
-
- how the type of activities changed over time
-

The Nature of my Personal Writing

Partly already conscious of the notion of learning as including non-rational features, and partly intuitively sensing that sub-conscious knowledge needed to be allowed for, I have allowed myself not only to write analytically and systematically, based on my conscious, theoretical perspectives, but also to act and write intuitively, and then to use such intuitive behaviour as further data to be analysed. This attempt to avoid always thinking and acting "rationally" means that, as well as investigating my own doings to see what they may reveal that is beyond my conscious rational knowledge (and current theories), I have also tried to allow the reader to see more than I see, by not tying off all the loose ends in a way which will make my story mean only what I want it to mean.

At first my writing happened in several different documents, so that I had separate journals for my summaries on the literature I was reading, for my critical notes for these, for my reflections on my own teaching, and for overseeing my PhD process. As I read more in the literature to do with metacognition, I saw the need to reflect more on the relationships between these, and consequently combined them all into one, and included even more idiosyncratic writing which I will explain further below. For a period all my personal writing went into my journal, so that it was a record or portfolio of all my personal thinking, whether alone or (as in letters) with others. Later, when the volume of writing became too great and I wanted to trace separate paths in different areas, my journal dispersed into several documents again, but this time the collection consisted of a personal journal, field diaries, collections of correspondence, and some simply went into cyberspace, without my keeping any record of it.

Range and Extent

I wrote anywhere between 3 to 12 personal journals, which I will call my "PhD journals", in a year, with each diary ranging between 30 to 70 pages. (I tended to write one for each month, but sometimes ran one over several months, especially when my writing had not been prolific.) This meant that there were about 500 pages of (single-

spaced) writing produced every year for more than five years, though in semesters where I took leave or studied part-time, my journal writing was non-existent or severely reduced for months at a time. As well, I kept separate diaries for my classroom research, which I called 'analytic memoranda', notes about what I observed, which included accounts of my field experiences, my reflections on these, and my analysis of their theoretical and practical implications. These also totalled many hundred pages of writing. These field diaries tended to be restricted to my individual reflections on specific research contexts, whereas my PhD Journals were more extensive, and more wide-ranging and unpredictable, since I saw everything else, including my field diaries, as food for reflection, cultural data which might need to be subjected to critical analysis.

Content

The following description is, as I mentioned previously, retrospective. I did not set out consciously to use the practices listed below. They are simply what happened when I sat down at my computer to "think about" my research and my PhD. Nevertheless, I can see that they include all the types of thinking practices which I had consciously learnt to use in the past to learn, to change, and to grow either emotionally or spiritually.

In order of their first appearance in my first journal writing these writing processes included giving summaries and description, performing metacognitive analyses of my learning and progress, doing critical thinking, using analogies and metaphors to clarify concepts, bringing subconscious beliefs and assumptions to consciousness, problem solving, and reflexive thinking. More specifically there were two types of writing that I would like to differentiate.

On the one hand, part of my personal writing directly addressed my theoretical and practical concerns. Genres, as far as they can be determined, included: annotations on literature read; critical analysis of these readings; spontaneous plans for classroom activities, research instruments, or research tasks; detailed research proposal plans; reviews of where I had got to in my thinking or in my research; and problem-solving which might include such things as goal-setting and reviewing, problem-shooting, and creating new plans. On the other hand there was writing which I used to address issues which, while related to my theoretical concerns, also addressed feelings and relationship issues, writing which I had made a conscious decision to include because I was convinced that they should be an important part of metacognitive processes. This included: sorting out distracting concerns, self-therapy sessions, analysing emotional experiences, letters to supervisors (for example, to renegotiate the supervisory relationship), letters (or drafts for them) to mentors outside QUT, contributions to email discussion lists, poems, and much writing and re-writing of both my personal history, both ancient and recent, and of the story of my thesis. A more thorough analysis might include other genres, but I believe clarity will be best served here if I list only the more common ones found.

I have not included examples of all of these in the extracts which run alongside this description of my methodology, for several reasons. In some cases it was a desire to preserve confidentiality where others were involved and where, even with the use of name changes, this would have been difficult. In other cases, it was because even

single instances of an activity would have been much too extended to include without their taking up a disproportionate amount of space. For example, most instances of the rewriting of parts of my own life story were too long, with the extract which appears (as a poem) at the end of the final chapter of this volume being one of the most compact instances.

Purpose

Before going into more detail, I want to stress that I did not consciously aim to use any of these processes. I simply sat down at my computer with a vague purpose of clarifying my ideas, reviewing what had been going on, examining problems I was having and observing and critiquing where I was going, and I did this in whatever way seemed natural for me at the time, using the "instruments of assimilation" (Piaget, 1969/1990) that I had at my disposal at the time. The only part which I did consciously and systematically was to date every entry, and to institute password entries to all such documents. Even the memos I scribbled on loose sheets of paper and then transcribed to my journals were carefully dated. This is an indication of the extent to which I saw my own thinking as a context-dependent, historical process rather than as something which could be abstracted from time and place.

I should also mention that the processes listed below did not take place sequentially, in an orderly fashion, but rather were inextricably intertwined. At one stage, when I was reviewing my process, I attempted to categorize the kinds of thinking I found myself doing, but it became too difficult to sustain. I had been reading Richardson's (1994) suggestion that research "writing as method" should have something of each of four kinds of writing: analytical notes, personal notes, observational notes, and theoretical notes, and I wanted to check whether I was doing all four or getting fixated on a particular type of thinking. With my kind of free-ranging writing, it was not easy to give a single label to any one sentence or paragraph, since the same sentence might be personal in relation to the immediate context, but theoretical in relation to another (e.g., my thinking about methodology). And whereas such categorisation was more applicable in my field diaries where my thinking was very goal-oriented, it was much less obvious how to apply such categories in my PhD journal.

Even when these categories could be separated out, I found that they were highly interdependent. As many writers have pointed out, observations are not theory-free (e.g., Denzin & Lincoln, 1994; White & Gunstone, 1992), and even a story is a theory of the way events are interrelated (e.g., Bruner, 1990; Connelly & Clandinin, 1990). Therefore, even when I had done several pages of writing which could be classified as one of Richardson's four types, such as a simple recount of my personal experiences as a science student, the construction process turned out at the same time to be an analytical one as I alternatively chose and rejected different ways of describing it, until I was satisfied that the story was a valid (i.e., meaningful and theoretically consistent) account of what had happened. By its very nature, to the extent that writing is not merely a rote process, it is a process of abstraction, of distancing oneself from observed events and abstracting personal and theoretical meaning from them.

Methods

A chronological account of the development of my journal writing may be a useful way to explain the different kinds of writing I have used in my personal journal or perhaps, given that I did not do it intentionally, it would be just as true to say, the different genres which have used me. I have already listed the genres I used. To simplify organisation, I have reclassified these into a smaller group of types of writing. In order of frequency of appearance in my journals, the following is a list of the types of writing I used: goal-oriented reflections, personal examination of conscience, critical notes while reading, cognitive behaviour analysis, observations and interpretations, memos, poetry-writing, letters and email to mentors, occasional letters to family members, and email to listserv groups.

Types of Activity

1. Journal Writing

- goal-oriented reflections
-
- critical notes while reading
-
- personal examination of conscience
-
- cognitive behaviour analysis
-
- taking stock
-
- brainstorming & surmising
-
- critical incident analysis
-

2. Outside personal journal

- letter-writing (mentors, listservs)
-
- poetry-writing
-
- memos
-
- graphical processes
-
- entries in bibliographic database
-

Goal-Oriented Reflection

The first kind of writing to appear in my reflective journal was reflective writing in which I reviewed my daily or weekly progress, and reflected on events such as discussions with potential and then actual PhD supervisors, in the light of my ultimate goal of finding a way of improving science education, and my more immediate goal of finding a researchable problem or question. As such it was personal writing where my values and goals were relevant factors. I first learnt to do this in an adult literacy teaching course where keeping such a journal was a requirement of the course, and I found that it helped me to become a deeply engaged learner who actively critiqued the course materials and discovered both the theoretical and practical implications of what I was learning. Later, it also helped me to step back from my research writing to review whether or not what I was currently doing was the best way of achieving the outcome I wanted.

[DIARYPHD.1ST] 11 Nov 1992

Is my problem just that the task of presenting a cut and dried 2-page research project in such a short time?

In all my other big research projects I had to go through an initial emotional stage when I came to terms with all the emotional issues brought up by the topic - shame at my lack of social skills, guilt at my being responsible for any negativities in my children's attachment styles, and an identity crisis at reconsidering I'm still going through that stage in this project and will be unable to deal with the purely (if that exists) cognitive aspects of the project until I'm through with the affective aspects - in as far as they can be separated.

Critical Notes While Reading

A concurrent kind of journal entry was reflections on the academic literature I was reading for my research. This was a separate "Notes" file which I began keeping on the suggestion of Jan Wilson from Griffith University, when I first considered doing a PhD in Science Education but had not as yet received a scholarship. It took the form of notes which accompanied my developing annotated bibliography. However, as I have explained in Paper 6, when I came to write annotations on the literature regarding metacognition, I could not help but be struck by the implication that if I wanted to be highly metacognitive myself, then I should try to integrate the different areas of my thinking with regard to my PhD, and hence I decided to integrate the two journals. (However, for a while longer, I still kept separate the "non-PhD" areas of my writing, which included the journal in which I reflected on the adult literacy teaching I was still involved in, and when I later started on it, a "social skills" journal. At this stage, I still believed these to be unrelated to my PhD.)

[DIARYPHD.1ST] 9 February 1993

Kempa, R. F. & Ayob, A. (1991). Another "qualitative analysis" of group interaction data. Without being given any qualitative analysis - in terms of the ease or difficulty experienced by the students - it is hard to evaluate the fact that only describing

cognitive talk took place in addition to interpersonal-interactive talk, and no explainer or insight level cognitive talk. Lack of context makes all evaluation difficult - were these students used to group discussions or was their usual mode of functioning as a class being lectured to. The promised data on the relationship between interaction data and achievement, personality and individual learning data was intriguing but frustrating. ...

Personal Examination of Conscience

Because I was doing such writing strictly for my own purposes, I found that I had no reason *not* to be honest about what was happening in my PhD, and, especially after I added a password to the file, it became a place where I could try out ideas without fear of being criticised about their relevance, their suitability for PhD study, their degree of conformity with currently acceptable ways of expressing ideas, or their moral propriety. This also meant that it could be a place for me to critically examine my own conduct without anyone else being a party to any mistakes or errors in judgment that I might confess, a practice which probably dates back to my Catholic childhood, where I was taught to "examine my conscience" on a regular basis as a necessary and normal part of good behaviour. Admitting my "sins" in this way gave me a chance to examine the situation, make plans to improve, and overcome any feelings of guilt or shame that might be getting in the way of clear thinking. As such my journal writing could be said to have reduced many of the defensive mechanisms we learn to use socially to hide from both ourselves and others unpalatable truths or embarrassing data, and to appear as winners in conflict situations, at the expense of real problem solving and progress, behaviour which Argyris (1983) has described as Model 1 thinking.

DIARY97.S-J. 27 January 1998

Another problem I ran into is that one of being more out to impress when writing something like a thesis chapter than out to grasp how things really are, and hence not really admitting to myself where one of my arguments was based on false premises. One example, was my casual reference to PEEL, which I wasn't sure would really stand up to proper scrutiny, but on the other hand, I didn't want to give up an assessment which was one of my original bases for why I did what I did. So I kept writing and rewriting trying to get it to sound fair, but I didn't really change the original link to my other thinking, which I think was faulty in the first place.

Cognitive Behaviour Analysis

A third kind of personal writing I did was sparked by ideas in the literature on metacognition which connected up with the theory underlying cognitive behaviour therapy and, to a lesser extent, humanistic therapy from my earlier studies in clinical psychology, both of which had been reinforced by the foundation readings in the adult literacy course I completed. The principle underlying this was that one's cognitive functioning was bound up with, and in some cases, obstructed by one's tacit beliefs about oneself, about one's world, and about learning and knowledge (see also Schoenfeld, 1985). An implication of this was that one way of facilitating learning was to make explicit and directly address such beliefs. Lefebvre-Pinard and Pinard

(1985) suggested that such a process should be included in any model of metacognition:

It is important to add a dimension that has been too often neglected by cognitive psychology: the awareness that an individual can come to have of the emotionally tainted internal dialogue she engages in while accomplishing a task and of the debilitating or facilitating effects that such a dialogue can have on her performance. (p. 196)

Research in education, such as reattribution training (Weiner, 1985; Borkowski, Carr, Rellinger & Pressley, 1990), suggested that directly addressing such beliefs could be a key ingredient for later successful transfer of training in metacognitive strategies.

If this was the case, then such strategies should be useful to address blockages in my own thinking. Moreover, given my basic training as a clinical psychologist, I could see how they related to possible clinical states such as debilitating depression and anxiety, which in turn could be related to problems to do with motivation and will. I decided that I could profitably use these methods on myself to overcome writing blocks and episodes of becoming disheartened or depressed. This meant being metacognitive about my own affective and conative states, and doing talk therapy with myself. An early entry of this kind was a formal six-column exercise using a framework suggested in a self-help manual for cognitive behaviour therapy (Burns, 1980), which I had been in the habit of using for some time before I began my PhD. Later on, once I had internalised the structure, these evolved into an informal written dialogue with myself about any irrational cognitive behaviour which I thought might be obstructing my progress. I found these very useful for lifting clouds that descended on me from time to time, and for re-energising myself when I had become discouraged. The same procedure also occasionally worked when I had a migraine which I suspected of being psychosomatic in origin.

[DIARY93.AUG] 10 October 1993

A walk to the kitchen to This time I was thinking again about the tension between X and me, and the fact that I don't feel I will be supported, if I want to involve emotion as an important part of learning that needs to be acknowledge....I'm really feeling that X is not right for me at the moment. I'm starting to feel as if no-one would be, that I'm a bit of a hopeless case. Time for a six-column exercise!*

1. I feel depressed, weepy and annoyed. 70%

2. because X doesn't want to read my free writing and doesn't want to hear what I have to say enough to give me the freedom to say it, and I feel the only way I can talk intelligently to him is on paper, so it feels like he has gagged and muffled me. 3.

Automatic thoughts.

[Automatic Thoughts] Error]	[Logic	[Rational Response]
<i>I should be able to talk experiences</i>	<i>Shouldy</i>	<i>Given my life</i>

articulately; I should be able to	thinking	and my present
capabilities		
think clearly. I should have my		and circumstances, I
should		
research project in mind by now.		be as I am.
Similarly with		
....	X.
I'm a miserable specimen.	Overgeneralization
I a bad PhD student.		Of what? Compared to
all		
		other humans I'm
probably		
		rather average.
Compared to		
		other PhD students I
		probably am too -
I'm just		
		disappointed not to
be a		
		superior one. I work
I've lost control of my PhD.	Not true	seriously and am
doing as		
		well as I can at the
moment.		
No one has taken it away -		
I've just given it up and		
can take it back again.		

6. This isn't working. I still feel depressed and expecting the worst of my meeting with X tomorrow. Try again.

6. I think I'm feeling a little bit better- depressed 40%, annoyed 10%

Taking Stock

Much of my diary consisted of simply recounting to myself what had recently happened. I found this helpful for a number of reasons. For my classroom research it was a way of keeping a record of all that I could remember of happenings in the field. As I wrote I always remembered much more than I thought I would, especially given my minimal note-taking which might consist of a few phrases or sentences. Reporting one incident tended to produce associations with other incidents which I had not seen as memorable but which, seen from a distance, took on new significance. As well as being a cumulative record, this also helped me to make connections between my observations in the classroom and happenings before or after the class when I had some informal discussion with my host teacher or with other school personnel, and my feelings and reflections as I drove to the University afterwards. The fact of typing all of these in the same session meant that I would make connections between the different parts of my experience.

As I commented above, the fact that the construction of my analytic memoranda inevitably involved me in having to choose words to express my observations and justify them as interpretations, which were always tentative in the first instance, meant that I was very active in the process and always had questions in the back of my mind about what I was writing. Similarly connections would happen between what I was writing on a particular day and what I remembered writing on a related topic the week or month before, and I would find some of my questions answered and new ones arising which helped focus my attention on data I might otherwise miss.

I also did considerable recounting simply to retrace my steps between two sessions of writing in my PhD journal. It was always a mystery to me how time had passed so quickly and yet I seemed to have so little to show for it. Listing my activities helped me to see where my time had gone and to make changes in my habits if necessary. In fact, I usually discovered that the time had been profitably spent if I took a longer-term perspective of my progress. While I might not have made progress in writing my dissertation document, the hours and days spent writing and editing email posts to individuals or to methodology discussion groups usually meant that when I did come to write my chapters and papers, I had already clarified many of my ideas and developed organising structures which made my writing much more meaningful and easier to do, because I could clearly see my research in the context of the debates to which it belonged. Such listing of my doings also allowed me to see that I had many claims on my time, and sometimes I was being unreasonable to expect more rapid progress of myself, and this would reassure me that I wasn't incompetent and prevent my becoming discouraged.

[DIARY95.AUG, 3 August 1995]

Last week, I was getting more and more uncomfortable with my research, not in itself, but in relation to my PhD thesis. I started to wonder if I could justify it in terms of my proposal? I had led up to a concern which I proposed could be addressed using journal writing and Y was suggesting that what was really powerful was team teaching and that's increasingly what we were doing....

I realised this yesterday when talking with S, as it seemed to me that the struggle I was having about my school research wasn't what I would write down in my analytic memoranda for S*C--it wasn't strictly relevant to any one field report on a lesson, and was more just in the nature of a vague misgiving I hadn't given voice to--once I finished my entry for the day.*

[ANMEMOS.S*C, 23 August, 1995]

....To get practical, something curious is happening in my research. At the same time as feeling that Y and I are starting to unsettle our assumptions about what science teaching is all about, how language is used, and what the relationship between teachers and students should be--at the same time as I'm feeling that something rather vital is going on, I also feel as though I'm become very acculturated, starting to think the same way as the teacher in the school, starting to have the same concerns about getting the syllabus across, getting students to pass exams. I've been there so long now, I'm ceasing to see things with the eyes of an outsider. I've stopped being critical about the things I was critical about at the beginning.

And yet my concerns for enlightenment, emancipation and empowerment are starting to be addressed, even if it is only in a small way, as we try to get the students to understand the genre of exams, the genre of science text book writing. The journal writing and the notebook work are not so distinguishable any more. I think as I've started to participate in conducting the classes, which I thought I shouldn't do for a long time, but which Y seemed to want, I've started to see things more realistically and less idealistically. I've become humbler and more able to talk with and understand Y, and it's become easier to criticise ourselves and each other, as we're both taking the same risks and exposing our practices in a more equitable way than before.

It still doesn't resemble some ideal critical action research, where outdated establishment ways of practicing are overturned in favour of clearly emancipatory ways. Though, as I say, I think there are subtle shifts that are happening, and not incidentally, but at base.

The crucial thing has been the problematising of taken-for-granted language of ordinary communication in the classroom. V. now explains to me why he is using certain difficult terms where easier ones could be used. The language of the science classroom was the factor which I thought was the most disempowering to the majority of students in this average level classroom--if they weren't middle class kids used to such words, they were just shut out as 'non-speakers' of the language.

And yet, while I'm doing this partly for emancipatory concerns, V's concern seems to be entirely technical. We both think the kinds of things we are doing will help students to be more successful in science, and I don't think it bothers Y if my ulterior motives which I have now made explicit, get satisfied as well.

At least he's starting to state openly what his goals for education are, to talk about it. And the way he expressed it, actually, sounded rather emancipatory in the end, too. ...

The effects of my recent onslaught on the exam and the way Y marked it, still remain to be seen. I think we have built up enough mutuality, a robust enough relationship for him to consider what I said seriously. Of course, now I have to take more responsibility with the next test and preparing the students for it, but that's good too. As we negotiate about the language used in it, and what should be accepted as right or wrong, we'll probably both start questioning some of our assumptions about what education is about. I think by starting to act more like a fellow teacher now, we can have more useful discussions.

Of course this team teaching can be seen as an alternative explanation (competing hypothesis--the old language is starting to come back) if students have better motivation and results, without even considering the particular methods we try. But then, later on when I withdraw, it will be interesting to see if Y has changed his attitude or methods, and whether this has interacted with the students in any significant way. In any case this should be seen as a case study of a particular situation of action research, rather than as a trial of an intervention.

Brainstorming, Musing and Surmising,

Much of my writing has the appearance of musing and surmising, rather than analysing. This is similar to the writing in my memos, except that it is much more extended. It is about making explicit developing insights, and seeing where they lead in terms of practical and theoretical implications. It includes brainstorming, which is simply a matter of listing all possibilities which come into my head, with minimal editing, or laying out ideas prior to becoming critical and choosing among them, though sometimes the choosing might be left for another time. For example, when I was considering creating a learning environment survey, if I was theorising about the factors which I thought should be included, I would brainstorm possible items. Alternatively, when I was thinking about the practical implications of reading I was doing, I would sketch a worksheet for students based on the idea, an exercise which I might or might not come back to and edit for use at a later date.

Such musing might appear to be an undisciplined exercise, and part of its success in terms of creative outcomes depended on its being unconstrained. However, the very act of writing, of choosing words, meant that it was in fact a very rational activity. Although it appeared on the page as what some may call "stream of consciousness" writing, in fact it was written in a very coherent and logical manner in correct sentences and coherent and cohesively linked paragraphs, and this did not happen unproblematically. Converting feelings and half-formed intuitions into such writing involved finding words, and hence a theoretical base in which to locate them, however implicitly. Such writing was often highly edited, as I struggled to find the best words to make sense of my intuitions. As this happened and I became clearer about how to deal with the ideas I was tussling with, I often found that the way I'd expressed something did not make sense or conflicted with something I'd said earlier. This meant either discarding one or other of the ideas or finding a way of expressing both ideas so that they both made sense. Consequently, there was some to-ing and fro-ing between paragraphs until I was much clearer about what I wanted to say, and had a logically consistent diary entry.

Hence what may later appear to be simply the telling of a story of an episode of my thinking about a particular issue, as though it had prior existence in my mind and was simply transcribed into a file, in actual fact it usually began as an inchoate jumble of threads of ideas and only started to make sense as I sorted them out and wove them into patterns where their meaning became clear. In the process, my potential "insights" became clearer and I often had many new insights which had not existed prior to my writing. My journals, particularly my PhD journal, seemed to play the role that Shakespeare implied dreams played: in them I "knitted up the ravelled sleeve of time", and if I went too long without writing in them, I began to feel that my life was unravelling, that I was losing control of its direction and its meaning. I relied on them as a way of sorting out the complications that happened in the research process, and of restoring a sense of calm in my research.

[DIARY93.OCT] 4 October 1993

Rereading what I wrote on Friday made me think of a slogan, "Give feelings a go!" As well, since I wrote it I have (rather cynically) thought about giving my theory a name - the sort of catchy latinate phrase that seems to go down so well in psychology,

c.f., attribution retraining, cognitive dissonance (it seems a male rhythm seems to help, i.e. the accent on the first sound), constructivism, reciprocal learning. "Sensitivity" is the only word that my WP thesaurus provides with this beat in the "feeling" family of words - besides "feeling" itself, which is a bit weakened by having an indefinite length. "Affect" would also work. Others that pass with a push are emotion, affection, inclination, sensation and conviction - they have the latinate sound, but not the strength. Feeling, passion and sentiment also have a strong sound about them as do all the passions - anger, envy, love, hate, joy, sorrow, zeal. I think it would help to team it up with something alliterative or figurative to make it memorable.

feeling ?

sensitivity in schooling, sensitive schooling/instruction

affect first, affect urgency, affect influence, felicitous affect or felicitous feelings, or, better, affect felicity (feeling felicity is a bit too ambiguous, especially since I have a niece called Felicity!)

passion principle

....

energy, affect energy, Affect Energy Incline Measure

What about something more post-modern?

viewpoint valuing

distributed, distributive

cultural criteria

social syntax in science

narrative

....

sensitivity to stakeholders

prioritizing pondering

....

Thoughts that occurred to me while adding to this list were:-

(i) a scale already exists to provide quantitative data on the Year 11....class

(ii) that giving students the opportunity to talk about their emotional involvement (+ve or -ve) in particular learning could be empowering.

(iii) students could assess themselves at the beginning of a unit of a particular activity for such factors as familiarity versus strangeness (based perhaps on a glance through the relevant textbook chapter), prior knowledge versus prior ignorance, willingness versus hesitancy, relevance versus irrelevance, autonomy versus

Critical Incident Analysis.

Earlier this year I wrote on an email discussion list for action research about the fact that I found that I tended to learn most from incidents which could be seen as trivial in themselves and which I felt compelled to write about because they left me with feelings of unease or guilt. I commented that they usually led me to recognise assumptions I held but of which I had previously been unaware. In reply a professor of education in Canada wrote back to say that this was the basis of the "critical incident analysis" method (Newman, 1998) which she has used for many years with teachers in her Education as Inquiry program, to help them understand their practice better and discover more successful ways of teaching.

These are the moments that I call "critical incidents" in that they are instrumental in revealing what Chris Argyris refers to as the gap between "espoused beliefs" and "action beliefs".

The methodology I've evolved is based on capturing critical incidents and using that corpus of observations and reflections on those tetchy moments as the basis for discovering patterns that connect or touch [sic] issues underlying instructional decision-making. It's helpful, too, to keep some kind of running account of what's going on but you'd be surprised how readily the tensions in the work become visible with a few brief critical incidents. (Email communication to AREOL-g09-l@scu.edu.edu, 2 August 1998)

The following example came three months after I had commented on the discomfort I felt in choosing between students who had raised their hands to answer a question.

*[Annotated. s*c. 23 August, 1995]*

Today, ... the problem of choosing between waving hands ... it occurred to me that why it troubled ... me so much is that the practice doesn't tie in with a philosophy of 'everyone learning', it depends on ... 'right answers being the ones which count' and some people being more valued than others. ... I'm going to abolish the hand-waving

I'm sure I wouldn't have had this new perspective into a classroom practice the way I did if I wasn't actually teaching ... wasn't sitting writing my diary later, trying to remember ... how ... what I was trying had gone. It was only when I was describing the waving hands to myself, and the problem I had choosing between them, that it hit me wouldn't have happened either ... if I didn't have a co-critic to make me more critical of myself than I would be if I had a private classroom of my own.

2. Outside personal journal

Writing Letters

Through the years, the proportion of my PhD journal which is given to drafts of email posts has continually increased and the amount of time I have spent "talking to myself" has decreased, although I still use it for problem solving. My first letters were to my original principal supervisor, particularly when I felt that I could not make my concerns heard in face-to-face communication. Later, this letter writing mainly consisted of individual posts to academics whom I had met and who had inspired me when they visited QUT, and with whom I wished to continue the dialogue about issues which they had raised and which I was still exploring in the readings which they had recommended. As time went on, such letter-writing also came to include emails to listserv discussion groups, first locally, and then at a national and international level.

In ongoing dialogues with visiting academics or other researchers, I used them as critical friends. They generously allowed themselves to be used as talking posts to whom I could address the implications which their theories had for my own research practice and with whom I could discuss doubts I had about any part of their theory, but as talking posts who would be critical if they thought I was not making good sense. Because they tended to listen supportively, they were especially important for providing a nurturing environment for my developing theories, an environment in which I felt safe enough even to begin to challenge any parts of their theories which I thought needed challenging. The supportive way in which my tolerant correspondents received my email posts had the result that I started to believe that I must have something worth saying about theory myself. When they took me seriously, I began to take myself seriously. Nevertheless, although they helped me to develop my thinking they did not provide the kind of challenge that those outside our cosy research circles might do.

I wrote them very long posts, doing much of the thinking I would previously have done in my journal in such writing, or perhaps refining further what I had previously written in my journal. I found this helped me to develop my ideas and was a learning experience for me, regardless of whether or not they replied (which, surprisingly, given the voluntary nature of the mentoring relationship, they generally did). Like my journal, such letters would appear to be simply running commentaries, but in fact they were edited and re-edited before I sent them. The first draft would be a brain-storm to myself of the issues I wanted to raise, which tended to go on for a great many pages, and then I would edit this, cutting out as much as I could, knowing that there must be a limit to even a friendly reader's time and patience.

Consequently such letters had the advantages of my journal writing (to myself), since the first draft intended only for myself was written in my journal with as little censoring as possible, which meant that I could be as honest as possible, without shame or fear. However, such communication acts had the further advantage of giving me a more critical audience than I could be for myself. In my editing, I considered all the research writing, including some of their own which they could expect me to have read, and which I knew they could cite in reply to any arguments I might make. Hence

my writing had to meet not only my own standards of honesty and critical thinking, but those of the wider research community to which such writing belonged. The fact that my respondents were friendly critics further meant that where I disagreed, I had to be generous, or at least fair, in the way I did this, in fact becoming in my turn a critical friend to them.

My contributions to lists served many of the same purposes (though I was to learn that posts of the same length were not so well tolerated!). However, they introduced a new level of critical thinking and were responsible for greater changes in my thinking. I could expect neither that other participants would share my views on research methodology, nor that they would be as forgiving as a personal mentor might be. My first email list posts were to a local QUT action research list which consisted of people who had already formed as a group off-line. They served as an extended group of critical friends. However, I was still resisting many of the values they espoused at that stage, and my posts tended to show me in the role of devil's advocate, though I did get some support as well as some silence. In any case, most participants on the list seemed reluctant to participate and so I moved on to discover other lists.

My most valuable find was ARLIST-L, a world-wide action research discussion list, which included many of the big names in action research. Why it was particularly useful for me was that, in association with a companion "Action Research and Evaluation On-Line" course, it taught me a new way of participating in a discussion. Based on Bob Dick's on-line resources which put forward an "Organisational Development" approach (see Dick, 1998), it espoused and practised writing in a spirit of collaborative learning rather than of winning an argument. When I began to do this, I learnt how to understand more of what was written by those I saw as my opponents and to realise that I could, in fact, accommodate much of it. Such compromise, however, was an effort and such posts on my part, often begun in an adversarial frame of mind, might take a whole weekend of editing before I judged that, if sent to the list, they would do my cause with my supposed opponents more good than harm. Not only did much learning happen while writing such posts, but more learning happened *after* I sent them, and reconsidered my arguments from the perspective of a variety of possible respondents, who might hold very different assumptions from those which I held. Thus I would gain new insights into the issues and into myself as a person whose perspective was very historically determined and limited. The fact that I often lived in terror of possible rejection or ridicule (by the entire list!), between the time of my sending the post and the time of the first reply, also helped to focus my mind on the many different perspectives on such issues. In time, I learnt that such fears were generally unjustified, as the list moderator was also a friendly mentor, whom I could trust to be non-judgmental and kind, and on whose style of interaction most list subscribers seemed to model their replies. In any case, my posts generally seemed to appeal to at least some other readers, and to raise further discussion.

Both the individual posts to adoptive mentors and to the groups tended to involve considerable risk-taking on my part, considering that I was only a couple of degrees less open in such posts than I was with myself in my journal. Before my PhD I had always been a very private and shy person who feared rejection and kept her opinions to herself. I probably would not have participated in lists this way, if I hadn't first gone through the stages of trying out my opinions with myself in secrecy, then with supportive mentors, and finally with "the world" of action research as I knew it. As

well, I had come to see myself not so much as an individual who was fully responsible for the way she was, but as a product of my historical situation, a limited human who was not able to change as fast as she would have liked, and hence who had to accept herself as she was. I did not see much point in being ashamed of how I had turned out, and thought that more could be gained by admitting both to myself and others how I really was, and joining in discussions from that position.

Nevertheless, my long, personal, self-disclosing posts were not always well-received and during one period of harsh criticism based on consideration of the "rules of netiquette", I had to reconsider my position. I tried writing short posts, but found that, without all the context-setting, the illustrations and the qualifications to my arguments that I was wont to write, there was much more likelihood that my meaning would be misapprehended, which would mean another post to try to correct the misconceptions, which, if it were too brief, might produce misconceptions of its own. I began to appreciate that building understanding of one's position was a long process of negotiating relationships in which the partners gradually tested out their assumptions and corrected those of their critics. This is my current stage and I'm particularly sensitive as to how difficult it is to have a discussion with people from different discourse backgrounds, since we tend to make false assumptions about each other's position. I'm realising how much mutual understanding depends, not only on establishing trust, but also on already having established a common language, and a habit of making explicit one's own assumptions and checking out one's assumptions about other people.

[Email Letters to Invidividuals/Mentors]

Subject: Truncated message

Date: Fri, 11 Nov 199 16:39:24*

:)

Dear NS

You may have wondered what I was on about in my last message, as I think my original `revolting' message to you got truncated. I went on for pages, once I got warmed up, and complained about all the `must's and such imperative language (which rang my antiauthoritarian buttons), argued that the research I was doing with a single teacher had all the characteristics of critical action research and therefore shouldn't be dismissed ... (this shouldy language seems to be contagious!), and got on to my hobby horse about the social construction of meaning NOT being equivalent to people learning by group discussion. But I think you were spared all this by a censor in our message system, as when I looked in my copies to self later, there was only the introduction to the tirade left. So lucky you! ...

Mary

Subject: Fiction and statistics

Date: Fri, 19 May 1995 16:12:45

:)

Thanks, R. You sure had an international cast of players! And I can see why they were impressed. You write so clearly, that it all seems so obvious that one wonders why one didn't think these things up oneself. But then it's only because you have put a new perspective on it that it seems so clear. ...

When I was saying your writing is often poetic, I was referring in particular to your own use of metaphor, and I seem to remember some pleasing alliteration too, rather than the use of rhyme and rhythm. I expect you realised that, though I was a bit concerned when I first got your email. I had a slight misgiving that you might have been making fun of what I had said. That you may not be the kindred spirit which your former writing suggested you might be. ...

I had a talk with HN today ... in which he warned me against being too radical in my PhD. I gave him my proposal to read and now I'll just have to wait and see what he thinks. I think or hope I have argued my case (for the form it is taking) in quite a scholarly manner, and perhaps I haven't been too radical there. But I'm really thinking more and more about using fictional narrative in my reporting of results. For one thing one can give as H has argued a more coherent version of the whole of one's findings in, for example, a composite character or typical day, than one can by using a limited number of vignettes, none of which can give more than a partial picture of what one wants to convey and which, out of context, may give a false impression from the point of view of the researcher, who knows the context in which it was said.

Something along the lines that a biography or autobiography may convey the truth better and more quickly (from the writer's point of view) using fictional incidents than using real incidents which may convey the wrong meaning to someone who doesn't know the whole context well. ...

Secondly, using fiction, such as fictional characters who embody real characteristics one has observed, is a way of handling the confidentiality issue, a way around making criticisms which may otherwise seem harshly personal when made about a particular person. I'm really tempted to use fiction to convey my interpretation of my own situation in a way that does not imply at all that other actors in it may see the situation that way at all. For what end? Why do something that implies that one is not being at all objective? For just that reason! I don't see that my (very deeply considered, of course!) insights can't be judged simply on whether or not they provide new insights to others, rather than on how well others (less insightful others, of course!) agree with my interpretation. There are other ways of being convincing besides having supporters. ...

I don't think this means that one is being less rigorous. One would still have to have done a rigorous analysis of the data. It's just the method of reporting the assertions that is more creative. Which is what H was saying this morning.

...

I'm getting a bit carried away here I only intended to write the first two paragraphs, but then I hope you will forgive me as this is a welcome relief from the transcribing work I was doing. And perhaps I'm still trying to bolster myself, seeing that I haven't met any other interpretive researchers who can even start to consider statistics as admissible evidence. Most look at me as though I'm a heretic, or someone who didn't listen properly when their research methods lecturer when he/she said that statistics only belonged in positivistic research, and only people of inferior understanding used them. (I wouldn't mind so much if some of these people didn't admit to never having understood how to use statistical procedures in the first place, and caution you in the next breath against drinking too much coffee because research has shown that it's dangerous.) Well, I must admit that H has argued for considering both quantitative and qualitative research results, but then that doesn't mean that he advises using them in the present climate. And I must admit that I find them to be of limited usefulness it just annoys me when people dismiss them out of hand in a dogmatic, unquestioning way.

19/5

Please let me know

(a) if you don't have time to pages of my thinking out aloud, or

(b) you think a lot of what I say is silly

and I will stop instantly. I just can't think of anyone else at the moment who might listen to the kinds of things I want to say.

Mary

[Letters to Email Discussion Lists]

To: arlistl@scu.edu.au

Subject: Re: from Paul Wildman re Action research in systems

Date: Tue, 6 Feb 1996 17:25:23

:)

I'd like to answer Paul's post but am still trying to think through this issue of expressing feelings in a rational dialogue, so am not sure how much sense I will make at this attempt.

Firstly 'rationality'. For me this used to mean using only linear, syllogistic reasoning, and I used to despise those who thought otherwise (for example when I studied

psychology as part of a science degree, I thought I was superior to those who were doing it as part of an Arts degree!). How ignorant I was. Mea culpa. For me, rationality still includes such reasoning, but now includes a lot of other stuff as well, and I see how limited it was and how unaware I was of all the issues involved in deciding what 'truth' is. ... I was pleased to hear (from research by Ference Marton and Peter Fensham) that Nobel Laureate scientists also claimed to trust their hunches a lot, i.e., their intuition, and to follow it up with all the 'rational' work to justify what they believed was so even before they could justify their beliefs. 'Rationality' as expressed in syllogisms is limited to language, and sometimes we can know something even before we get the language for it.

Secondly, on outbursts.

I really think there is something important in what Paul had to say, and that's why I wanted to give it a go. I can see that this might mean that we might sometimes say something that seems less than tactful, but if the dialogue goes on, such misunderstandings can be cleared up, and I can see that they usually are in Paul's case, which gives me a hope that if I get it wrong the first time I can later redeem myself also. One advantage of being a bit emotional is that you can convey to others how important something is to you. You can also convey feelings of hurt which can then be addressed. But most importantly, I think it gives truths that are lurking just below the surface the chance to emerge, and be addressed. I have discovered that since I started admitting my feelings, I've learnt a lot about the real reasons why I do things, rather than the 'rationalisations' I used to be content with. And that's one problem with syllogistic logic, as Edward de Bono argued after a visit to the Middle East: clever people can usually justify anything they want to, using logic, and it doesn't help much to settle disputes.

On spelling. ...

Mary

Date: Thu, 27 Jun 1996 14:26:19 +1000 (EST)

Subject: Action research

To: arlistl@scu.edu.au

Dear Arlisters

I have recently been reading Ned Kock's paper, and asking myself if I want to call the research program he has undertaken 'action research'. This is problematic for me because I also want to call my overall research program action research, and felt happy about doing so until now.

Yet, unless action research is to become an all-embracing term in which case it would become meaningless I think it should be reserved for research with particular characteristics.

If we only have a requirement of cyclical research, with each step building on the findings from previous steps, we would end up calling all scientific research programs 'action research'. Surely the Curies, for example, worked by continually refining their processes and theories, with the occasional leap or change of direction. Do we want to call that action research?

I thought that the term 'action research' only came into being in relation to research of a particular kind, where a group of participants in a social context tried to improve their situation, by collaborating to develop group solutions and theories in ongoing action and reflection.

computer-assisted dialogue worked. Ned seems to be claiming that it is the _overall program that is action research, even though each stage was done in a different context. This seems to me to be more of a scientific research program because it is carried out by scientists, using subjects, rather than by the participants in the social context themselves in contrast to an action research program.

Mary

"Progress in human affairs is not like progress in the physical sciences: as we begin to see the lines on which to design a strategy for solving the puzzle, the puzzle itself is changed." (L. Stenhouse, 1990)

Date: Sat, 01 Aug 1998 23:19:36 +1000 (EST)

Subject: [AREOL-G09-L:44] Re: Unconscious processes

Sender: areol-g09-l@scu.edu.au

Dear Judith and other Philosopher Action Researchers,

Thanks for the reply, Judith. It is helpful. What I think I meant by intuitions was "those moments which catch my attention" which I know are significant but I'm not sure why until much later. And I certainly agree that sudden "insights" need reflecting on, and shouldn't just be accepted as the truth. For me they usually seem to reveal a lot about my underlying assumptions and expectations that I hadn't realised.

Actually the most significant moments for me are often the ones which I dismiss at first because they have some uncomfortable feelings attached to them--a vague feeling of embarrassment or guilt which doesn't seem strong enough to bother about (and perhaps a little too petty to put in a research report anyway?). But they won't allow themselves to be dismissed and finally niggle me into thinking the moments through, if only to get them off my mind.

And that's where I find out amazing assumptions I'm making that I would never have dreamed I was capable of making--in one case realising how authoritarian my thinking still was (or was it a matter of loyalty?) and how much this was preventing me from adapting my (action research) method to suit my research situation.

A point I think you would agree with me on is that I think they are often more fruitful to reflect on than one's planned observations on the "real" action--though I'm sure that they happen more often in ground that has been well tilled--as your post on literacy suggests. I look forward to reading your article.

I still have some trepidation about arguing that this constitutes a good/rigorous research methodology, which is one reason that I'm going to put several published articles in my thesis--to show that it works, that it produces good insights and interesting theoretical advances. Your papers should help me in this, perhaps allowing me to find some order in a method which seemed terribly ad-hoc at the time--I didn't even allow that my journal was part of my research method for quite a while--it was just a self-indulgence I knew I needed to do to clear my mind of a lot of thoughts which cluttered up "the back of my mind".

Perhaps it's myself that I'm still trying to convince. Still thinking that learning has to happen in an explicitly logical manner to be respectable. As though all that is happening at a subconscious or nonverbal level--feelings, assumed values and relationships--doesn't come into it. Nostalgia for the "good old days" when everything seemed so straight-forward? I've enjoyed your posts to ARLIST in the past, Judith, and am glad you are doing this course at the same time as I am, along with a diverse group from all corners of the globe, and probably also from all points on the action research spectrum.

Mary

At 09:54 PM 7/29/98 +1000, Judith Newman wrote:

>I take my lead from detective fiction -- my favorite de tective is Joe Leaphorn....

Writing Poems

Another kind of writing I did in my thesis was poetry writing. This was not done in isolation from my other kinds of writing, and in fact, it usually developed as an alternative way of writing a letter, when I wanted to get across a point which could be communicated better with analogies and metaphors than it could by logical argument, usually because it was to do with values rather than facts. For example, when I first read Guba and Lincoln and had not come across ideas like theirs before (1989), it seemed to me to be rather dogmatic in its condemnation of positivism and quantitative research and in its setting up of new rules of acceptable research behaviour and language use. As such it seemed to me to be a sort of manual for former positivists, who, if they were going to change their religion, needed new dogmatic truths and rules to replace the ones they had had to give up. It rather reminded me of the Catholic catechism which I had had to learn by heart in my childhood to rule my thinking and behaviour. I also found it difficult to accept that consensus should be the goal of research, being rather too suspicious of how it is generally reached in group situations. Again graphic examples from the past of when it had led people astray seemed the best form of argument. (I should mention that what seemed true for me in a holistic way when I wrote the poem--and I found it did strike a chord with several readers when I sent it to an email list--seemed much less true when I examined it recently, for example, when I recently re-read the quotations from the book which I had copied into my bibliographic data base years before.)

The most efficient and effective way of getting these points across in this and other communication situations during my PhD seemed to be in a poem, where extraneous words could be pared away, leaving only the images and the analogies. I'd already given up the idea that people could be swayed in their thinking by using logic alone, especially when it came to values. This was simply an extension of the kind of writing I was already doing to some extent in my email letters, where I would use stories and analogies to illustrate my points, in the hope that these would engage people by connecting with the reality of their own lives. Poetry was a richer and a more powerful way of achieving the same kind of immediate personal engagement, since a lot could be conveyed in comparatively few words, with extra layers of meaning being conveyed by the structure, shape and rhythm of the poem, and its allusions to other contexts.

I used poems when I wanted to convey strong emotions or recapture the affective essence of something. I believe academic prose may not be the most appropriate medium for questioning values or ways of relating interpersonally. An academic style of communicating generally gives priority to the content or ideas to be communicated, and lets the interpersonal and evaluative content be fixed by conventions which take these to be unproblematic aspects of research. Of course academic writing can directly address these tasks of communication, without going outside those conventions, but doing so in such a way would seem to suggest that research relationships do not need to be changed and that rationality is a narrow field which does not include value and relationship factors. Poetry escapes these conventions and is able to convey a broader view of rationality by situating issues more tellingly in contexts where the assumptions underlying them are questioned.

[With the introduction I gave it when I sent it to an email discussion list much later]

"Well, Pip, for what it's worth here it is! I certainly had fun writing it, but I should mention that I wrote it for a very selected audience my main supervisor (at the time) and the person who introduced me to Guba & Lincoln (1989).

There are also references to a rather authoritarian Catholic upbringing G&L reminded me of the catechism of do's and don'ts and definitions that we used to commit to memory, and the sacrament of Confession as I experienced it as a child, and to Yung Chang's book "Wild Swans" which I had just read.

I was also struggling at the time against the idea of negotiating meaning with the 'researched', that is, of research not being a solitary endeavour, but rather the result of group consensus." [Post to ARLIST-L@scu.edu.au, 27 May 1996.]

IN THE HORNS OF A CATECHISM

"Bless me, father, for I have sinned

The catechism seems so, so constrained,

So artificially constructed, so selfrighteous."

"Thou knowest thou must not use the language of numbers

For numbers are an abomination to the Lord.

Except as We have explained,

*To help resolve claims, concerns and issues, that have not been resolved
by dialogue."*

But it was such fun.

"Path analysis might do it," I had said.

"These factors are all tied up together somehow."

"Umm.. two groups of factors," he had mused,

Canonical correlation."

"Yes!" I said.

"Go now, my child, and sin no more."

"Father, I'm sorry,

It's just.. it's our mother tongue, you know.

You say we're taking unfair advantage

Over those who take it literally?

Well, yes, of course that could happen

But all's fair in love..

Give them equal power?

But I'm writing this thing, I'm accountable

What if I don't agree with their conclusions?

They are swayed so easily:

Friends, Romans, countrymen, lend me your ears.

I come to bury Caesar..

Yes, some are more equal than others using words.

So why not put the power of numbers

at the service of the less eloquent?

Is consensus fairest?

Or just best for those who had the most power in producing it?

If it can support

Slavery and Klu Klux clans

Homophobia and "poofster bashing";

The status quo;

If it can spur a reign of terror

And teach all China to call it a "Cultural Revolution."

Except Yung Chang's father

(who believed in communism)

And her grandfather

(who believed in humanism).

Why not prefer the Power of One

When it acts in compassion,

In eloquent selfsacrifice.

My thesis is _my_ argument,

My "Wild Swan" song?

Just part of the dialogue

Which continues on..

Mary Hanrahan

January, 1994.

Memos

A significant part of my journals consisted of memos, significant not in terms of space, because they were written in as few words as possible, but in terms of content, as they were dense, and usually represented ideas which were in some sense insights. These were usually written away from the computer, when I was busy doing something else, but came up with a thought or question related to my research or to issues with which I had been dealing. Although it was not something which I wanted to deal with at the time it came, it was something which I felt I might want to come back to later to develop further. When I did get back to my diary, I would try to transcribe any which had occurred since my previous journal writing episode, under the correct date headings. I must admit, however, that occasionally the sheets they were written on would lie around for days or even weeks or months before I would finally transcribe them.

When I did transcribe them, rather than taking one at a time and developing it, I would transcribe them all, one after another (there might be a dozen or more at a time, especially if I had been reading in bed on Saturday morning or at some other time which was equally productive of such insights). However, I would usually go on writing about what was uppermost in my mind, and only come back to them later, if at all. The fact that I had captured these ideas in writing, and then had thought briefly about them again as I transcribed them, meant that they seemed to stay in the "back of my mind", hanging there as question marks, and would be more likely to "come to mind" during my later writing, or to be followed up with further insights when I was away from the computer. Ideas which came to mind but which I did not capture in this way seemed to be forgotten and not retrieved because the stimulus for them had come and gone.

Often I had these insights while I was reading research or theoretical literature, and implications in it for my research "hit" me. Alternatively, they might "come" while I was listening to a tape of an interview while I was doing something like scrubbing the kitchen walls in-between sittings of transcribing interviews. Listening to ABC Radio National documentary reports and interviews also seemed to lead to new insights, or

illumination might come when I was simply hanging out the washing, having a bath, or during my frequent visits to the kitchen to get myself a hot drink during my days spent at my computer writing.

The main requirement for their occurrence seemed to be that I had put my thesis aside temporarily and was putting no pressure on myself to think about it, but while it was still my major task of the week. They rarely happened when I was at my desk at QUT, for example, and seemed most likely when I gave myself permission to "stop work" and lose myself in a book or article which was not directly relevant to my current writing, for example when I stayed in bed on a Saturday morning, with all the weekend ahead of me to make up for such indolence. If I described my journal writing as an indulgence, the kind of work which I was doing when I had new insights was even more of an indulgence, something which I intuitively thought might be helpful for my thinking in some area of my life, but which I couldn't necessarily have justified to a supervisor who was wondering why the next instalment of writing was not on his or her desk.

[DIARY95.DEC, 3/12/95]

**NTLE--journal-writing use gives messages:*

- that all s's learning or input counts, no matter at what level. [Note. 17/2/96 This influenced by teaching adults.]*
- that prior learning is accepted as starting pt., without judging.*

** I'm not in favour of teachers having practices imposed on them that may not be congruent with their own theories of learning--t's are professionals who should act according to their own best judgment.*

** Feedback is essential.*

** Stenhouse's plaque. "T's will change the wld of the school by u'standing it."*

** S's learned that they were not missing out by having less content & more journal-writing. e.g., N*.*

** My learning from the conference is still inchoate, but nevertheless I feel I have been pushed along in a few areas & hope I won't lose this through failing to think new ideas through. I'm seeing my own thesis from new perspectives.*

- in rel. to language & lit. & VP (though I think I've learnt more about what I don't know than what I do. Still this opens a new door. This is somehow related to postmodernism but I don't have much grasp on how yet.*
- in rel. to post-structuralism but I'm not aware of what this "embodied learning" stuff is all about except that it might relate to the "praxis" notion of PAR.*

[DIARY98B.DOC] Sunday, September 20, 1998

[My depression actually a necessary & healthy part of my thinking.]*

[Insight is associated with increased autonomic arousal and causes a feeling of being re-energised. If we don't allow students to be autonomous in their learning, but hand them out insights ready-made, we are preventing them from having this rewarding feeling in their learning. This relates back to my KG study, where I talked about how students eyes lit up and their faces brightened as they started to talk in an energetic way about projects in which they had the power to make their own choices.]*

*[** 24/9/'98*

[Pink pen--which probably means I wrote this while entering Lear quotes in Papyrus]

** "niggling" cf. Seifert et al.; impasse could also be cognitive or emotional dissonance*

** cog. dissonance vital for taking into account several theories at once.*

** why do we have to assume all the working of the Mind are rational?*

[Red Nikko pen--at this computer--while doing email?]

**Lear--asociations--adaptive function--no purpose but can be put to use.*

cf. Seifert's opportunistic use of associations.

[Black pen--probably while I'm sitting on my bed, editing my article.]

** My tendency to associations similar to Ced's--in his case leads to schizophrenia. Perhaps some people are less susceptible, making them better adapted to automatically following accepted programs and less inclined to creative thoughts.*

[Red pen--definitely while editing article.]

** Change requires breaking out of systematic behaviour.*

[Black pen, but would be still on bed.]

** Feeling associated w. other cognition--Helps accentuate, draw attention to goals and dissonance. **]*

Graphical Processes

Another process which I did away from the computer and the bustle of the world (again usually sitting up against pillows on my bed, with my gaze wandering to the

greenery of palms outside my window, and the poinsettia branches and the sky above them) was drawing a series of three-dimensional structures, as I tried to transcend a linear approach to my data (whether narrative or logical) to find a more holistic way of looking at it. Sometimes these pen and paper exercises might simply consist of ways of reorganising a mass of verbal material in order to find the overarching principles, for example, when I wanted to write an article, or plan the way my writings would be arranged in my thesis. These graphical processes could help me simultaneously view and manipulate the main elements in a mass of data which had become too big to easily grasp using a linear process of writing.

On other occasions they might take the form of a search for an image to represent a process, a visual metaphor or analogy which could help me capture a change in the basic framework of my thinking and allow me to communicate it to others. An example of this was the palm tree analogy I used to represent my thesis as a dynamic, evolving, cyclical process when I presented my confirmation of candidature proposal (Paper 4), and another is the multilayered expanding structure I thought best described my methodology more recently (see Chapter 7 for a written description of this process).

Both these graphical methods were a break from my usual verbal way of thinking. As well, they were generally a deliberate decision to find an efficient way of achieving a new synthesis, and of making explicit developing tacit understandings or intuitions, whereas my journal writing was generally much less deliberate, with new insights being an unexpected bonus when they came, rather than something which could be expected. And yet the two were interdependent. Without all the verbal sifting, sorting, arranging, and evaluating which went on my journal, I would not have had the clarity to see my data in manageable chunks for simultaneous processing.

Selecting and Entering Quotes Into a Bibliographic Database

There is another method which I have not so far mentioned because it has become so second nature to me that it is almost invisible, and also because it is what I imagine all researchers do. This is the way I go about annotating my bibliographic data base. Yet, recently, at a criticism that I was being wilful in spending hours entering quotations into my data base when I should have been writing, I realised how integral it has been to my journal writing method. From the beginning, the main annotations I have put into my database have been selected quotations. I rarely made critical comments but left these to my reflections where I could tease them out rather than leave them as terse, unexplored judgements.

My copying of quotations into my Papyrus files has been extensive, such that it would take me a whole week to "read" a single article such as Erickson's (1996) chapter on *Interpretive Research*, because at the same time as reading, I was spending considerable time transcribing all the quotations which I perceived to be significant and likely to be useful later, which, in this case came to 20 notecards with an average of two screenfuls each. More recently, I entered 35 notecards after reading Lemke's (1990) book *Talking Science*. The acts of selecting, then transcribing word for word each of these quotations, seemed to imprint them on my memory in a way which

made their essence or language available for intuitive processing later. Often I would copy passages even though I did not understand them well just because I felt intuitively that they were bound up with some of the question marks collecting in the back of my mind. In fact the less I understood in an article which I sensed to be quite significant, the more notecards I was likely to produce from it.

As with other activities in which I could not justify the time spent except intuitively, I felt guilty about this excess, but continued on with it, nevertheless, consoling myself that I was doing at least forty hours a week on more acceptable activities and could be allowed to do as I wished with my own time beyond that. When I came to write in my journals, however, this database proved its worth, as while I was reflecting, I had at my fingertips almost instantaneous access to the most significant writing of almost every article I had read since I began my thesis, and could follow up intuitions about a new idea having come up somewhere else before, or check my guesses against what authors had actually said. For example, I remember needing the following citation several times, and was pleased to find that I had noted it in my annotations for the book:

As Adrienne Rich puts it, "When someone with the authority of a teacher, say, describes the world and you are not in it, there is a moment of psychic disequilibrium, as if you looked into a mirror and saw nothing." (Bruner, 1990, p. 32)

Doing searches for needed quotations would also throw up unexpected finds, forgotten research, similar or contrary writing on the topic by other theorists, and other items which, although irrelevant, could spark connections which might lead to a fresh approach to a current problem. My database now seems like a storehouse of treasure and my time in Papyrus well-spent, by any measure.

Analysis

A significant part of the writing included in the methods cited above could go under the heading of analysis. Some is obviously so, such as my detailed analysis of my own automatic thoughts when I was depressed, to find and correct their dysfunctionality. At other times at first reading, it sounds like little more than a recount of a train of associations, which might include anecdotes, theories these relate to, my feelings associated with both, and prior experiences related to any of these. However, whenever observations and stories are told, the findings in the literature listed, or insights or feelings are reported, they are nearly always immediately followed by detailed critical analysis of my own interpretation, comparing it with other possible interpretations, with observations in earlier findings and in terms of relevant theories. I could not simply accept my own interpretations and conclusions as valid, given that they often did not seem to be the kinds of interpretations and conclusions I encountered in the science education literature, or which I imagined some of the (male) science education researchers around me would make. As my biographical chapter shows, the world view I had learnt as a child was one in which my perspective counted for little when it was in disagreement with that of males in situations of authority, and this seemed to remain the automatic perspective I took, even as an adult, a perspective which I could overcome only through conscious effort.

Much of my field notes, once I allowed myself to stop trying to be an objective observer, is analytic. I realised this when I read van Manen (1990) and saw that my writing could not be considered phenomenological because it is interspersed with continual interpretations and analysis of the interpretations in terms of theories in the literature or in terms of my prior experience. My reviewing of my own case is always heavily analysed. This included my early drafts of my intellectual biography chapter, before I decided to excise all analysis and put it in appropriate discussion chapters. Email letters to mentors and to lists are also mainly analytical at base, since, even though I might use stories or analogies to back up an argument, the letters are usually discussions of questions of theory or methodology. More obviously, reports of my progress, written for supervisors who have been absent or in preparation for proposals or 6-monthly reports are analyses of my progress in terms of the goals for my PhD. My analysis thus was focused on my field research, on my situation as a research student and on my relationships with my supervisors and the University, and finally on my methodology and its implications.

Conclusion

My meta-research method seems to have involved some measure of analysis but an even greater measure of synthesis. It included the breaking down of propositions into their constituent parts and examining the parts to see if they could be supported, such as when I did cognitive behaviour therapy to deal with what I perceived as dysfunctional thinking during one of my episodes of depression, or when I reflected about the appropriateness of an analogy, a conclusion, or an emotional experience. However, overall, an analysis of my methods seems to reveal an even greater strive for synthesis, by whatever means that might be achieved.

Sometimes, this has consisted of discovering how a collection of data fit together into meaningful wholes, as with graphical processes and poems. More often it consisted of sudden insights which came only after, sometimes long after, I had become uncomfortable about and begun, if only at an intuitive level, to question the old "wholes" I had previously accepted as normal. This could be seen in an incomplete way with memos, and more fully in the way, after hours, days or weeks of reporting and musing about apparently trivial incidents in which something seemed wrong with my behaviour or my interpretation, I would eventually reconsider the assumptions underlying the event, make new connections, perhaps in the light of new theories and come to a new synthesis which could comprehend the discrepant incidents. Cognitive or emotional dissonance was almost invariably part of this process, and values had to be re-assessed, so that I could move from one way of framing experience which seemed at odds with an intuitively sensed broader understanding to another which, after examining the evidence, took into account a wider range of sociocultural data.

This process of continually trying to arrive at a new synthesis of the data I had available, could be compared with the processes of synthesis in grounded theory methods of research or ethnography. I was continually searching for the terms with which to make sense of my experience and condense my understanding of it. Even though I was not fully conscious of it, in some ways I was treating myself as a particular case which needed to be explicated in order to achieve greater understanding of the research work I was doing in science education. Implicitly, I was

doing an ethnographic study on my own case, with each diary entry being like an unstructured interview which provided rich data for further analysis and synthesis. However, rather than claiming that my understanding was almost entirely grounded in the data and therefore somewhat objective, I also allowed for other more intuitive processes to help me achieve a new understanding which, although it was also grounded in the data, could only have been the product of a person with my particular cultural, physiological and psychological history.

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